

Contaminant Screening Study Libby Asbestos Site, Operable Unit 4 Libby, Montana

**Final Summary Report for the
Cabinet View Country Club Investigation**

April 2005



Summary Report

Response Action Contract
for Remedial, Enforcement Oversight, and Non-Time
Critical Removal Activities at Sites of Release or
Threatened Release of Hazardous Substances
in EPA Region 8

U.S. EPA Contract No. 68-W5-0022

Final Summary Report
For the Cabinet View Country Club Investigation,
Contaminant Screening Study,
Libby Asbestos Site, Operable Unit 4

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Prepared for:
U.S. Environmental Protection Agency
Region 8
999 18th Street, Suite 500
Denver, Colorado 80202

Prepared by:
CDM
1331 17th Street, Suite 1100
Denver, Colorado 80202

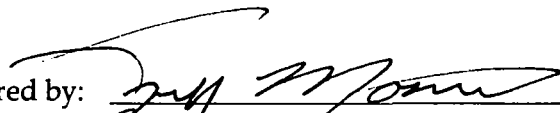
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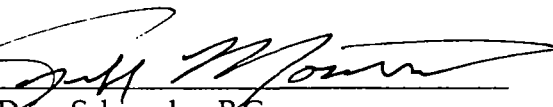
Prepared by:

For 
Dee Warren, P.G.
CDM Project Scientist

Date:

4/21/05


Reviewed by:

For 
Dave Schroeder, P.G.
CDM Project Scientist

Date:

4/21/05

Reviewed by:


Jeff Montero
Project Manager/CDM Quality Assurance Coordinator

Date:

4/21/05

Approved by:

Jim Christiansen
EPA Region 8 Remedial Project Manager

Date:

Contents

Section 1 Introduction

Section 2 Field Activities

2.1	Verbal Interview	2-1
2.2	Visual Inspection	2-1
2.3	Soil Sampling.....	2-1
2.3.1	June 2004 Soil Sampling Event	2-2
2.3.2	September 2004 Soil Sampling Event.....	2-2
2.3.3	December 2004 Soil Sampling Event	2-2
2.4	Dust Sampling.....	2-3

Section 3 Quality Assurance/Quality Control

3.1	Deviations from the Sampling and Analysis Plan Addendum	3-1
3.2	Achievement of Data Quality Objectives	3-1
3.3	Data Validation and Reporting.....	3-1

Section 4 References

Appendices

<i>Appendix A</i>	Verbal Interview Documentation
<i>Appendix B</i>	Field Log Notes and Field Sample Data Sheets

Figures

- 1 Cabinet View Country Club Soil Sampling Results

Tables

- 1 Results of Soil Samples Collected During Investigations at CVCC
- 2 Summary of Soil Samples Collected in September 2004 that Contain LA
- 3 Summary of Soil Samples Collected in December 2004 that Contain LA
- 4 Results of Dust Samples Collected During Investigations at CVCC

Acronyms

bgs	below ground surface
CDM	CDM Federal Programs Corporation
CSF	close-support facility
CSS	contaminant screening study
CVCC	Cabinet View Country Club
EPA	U. S. Environmental Protection Agency
LA	Libby amphibole
OU	operable unit
PLM	polarized light microscopy
QA/QC	quality assurance/quality control
QC	quality control
RI	remedial investigation
SAP	sampling and analysis plan
SRC	Syracuse Research Corporation
VE	visual area estimation
%	percent

Section 1

Introduction

The purpose of this report is to summarize contaminant screening study (CSS)/remedial investigation (RI) field activities conducted by CDM Federal Programs Corporation (CDM) at the Cabinet View Country Club (CVCC) in Libby, Montana between June 2004 and December 2004.

Consistent with other areas of Libby, Montana, vermiculite may have been used as base and/or fill material throughout the golf course greens, fairways, tee boxes, and sand traps. Visual inspections were performed and soil samples were collected, to determine if vermiculite and/or Libby amphibole (LA) is present in these areas of the golf course. In addition, an interior inspection of the club house and pump house were performed to determine the presence of vermiculite containing insulation. All investigation activities were conducted in accordance with the Final Sampling and Analysis Plan (SAP), Remedial Investigation (CDM 2003) and Final Sampling and Analysis Plan Addendum for the Cabinet View Country Club (SAP Addendum) (CDM 2004a).

This summary report presents verbal interview information, visual inspection results, site-specific surface soil sampling data, and dust sampling data to be used in RI decision making for CVCC.

Section 2

Field Activities

The CVCC investigation consisted of a verbal interview, visual inspection for vermiculite, and surface soil sampling. Unless noted in Section 3.1, all field documentation and sample collection procedures provided or referenced in the SAP Addendum were followed. The following sections summarize the CVCC investigation field activities.

2.1 Verbal Interview

An interview was conducted with CVCC personnel on September 30, 2004 to determine if there were any known locations of visible vermiculite on the CVCC property. During the interview it was stated that some vermiculite was brought in as fill material for tees and greens, and the pump house contained vermiculite used as insulation in an add-on section. There were no other known areas of vermiculite at the CVCC property.

2.2 Visual Inspection

As part of the CVCC investigation the club house and pump house were inspected to determine if vermiculite containing insulation or building materials were present in these structures. The results of these interior inspections are discussed in this section. The primary and secondary structure information field forms filled out during these inspections are included in Appendix A.

The only vermiculite observed during the visual inspections of the club house and the pump house was in the pump house where it appeared to have sifted into the walls of the original section and in half of the attic space at a depth of ½ inch.

In addition, during all soil sampling activities observations were made regarding any vermiculite observed. The specifics of vermiculite observed during soil sampling are discussed in Section 2.3.

2.3 Soil Sampling

Soil sampling at the CVCC was conducted in three separate events: June 2004, September 2004, and December 2004. Each sampling event is discussed in this section. Soil samples were collected, prepared, and analyzed in accordance with procedures presented or referenced in the SAP Addendum.

In total, 76 surface soil samples, 10 subsurface soil samples, and 2 samples from the bunker sand stock pile were collected during this investigation (Figure 1). As applicable to all soil samples collected under the Libby RI program, soil samples were processed at CDM's close support facility (CSF) in Denver in accordance with the soil preparation plan (CDM 2004b) and analyzed for LA asbestos using two techniques:

polarized light microscopy (PLM) visual area estimation (VE) and the PLM gravimetric method (Syracuse Research Corporation [SRC] 2003). The U.S. Environmental Protection Agency (EPA) is in the process of evaluating the accuracy and replicability of each of these methods. However, based on EPA's performance evaluation study to date, PLM-VE results are currently being used to make project remediation decisions. For the purposes of this report, only PLM-VE results are presented.

2.3.1 June 2004 Soil Sampling Event

On June 4, 2004, soil sampling was conducted at the #3 tee box per the EPA's request. CVCC had informed the EPA of impending repairs to the #3 tee box; therefore, EPA requested that CDM determine if LA was present in the tee box before the repairs were made.

Two five-point composite samples (CS-18555 and CS-18556) were collected from the upper and lower tee box, respectively (Figure 1). Both samples were collected from 0-8 inches below ground surface (bgs) and no visible vermiculite was observed in either sample or to an exploratory depth of 12 inches.

Sample CS-18555 collected from the upper tee box had trace amounts of LA (< 0.2 percent [%]) and sample CS-18556 was non-detect for LA. Logbook notes and field sample data sheets are provided in Appendix B, and all soil sample results are presented in Table 1.

2.3.2 September 2004 Soil Sampling Event

During the September 2004 soil sampling event, conducted from September 27th to September 30th, a total of 41 soil samples were collected. Of these 41 samples, 20 were collected from the course's greens (10 samples from 0-12"bgs and 10 samples from 12-24"bgs), 19 were collected from the course's tees with each sample from 0-8"bgs, and two were collected from the course's stockpile of sand used in the course bunkers. All samples were collected as five-point composite samples except for the samples collected from the sand stockpile, which were grab samples.

Of the 41 samples collected during the September 2004 soil sampling event, 24 field samples and one field duplicate had trace amounts (< 0.2%) of LA. These samples are shown on Figure 1, and summarized in Table 2. All other samples collected during this investigation were non-detect for LA and did not contain any visible vermiculite.

Logbook notes and field sample data sheets are provided in Appendix B, and all soil sample results are presented in Table 1.

2.3.3 December 2004 Soil Sampling Event

Due to the results of the September 2004 sampling event, EPA requested additional samples be collected from the tee and fairway areas at the CVCC. This sampling

event was conducted between December 10, 2004 and December 13, 2004. During this sampling event, 45 grab samples were collected from 0-1" bgs.

Of the 45 samples collected during the December 2004 soil sampling event, 7 samples had trace amounts ($< 0.2\%$) of LA and 2 had concentrations of $< 1\%$ LA. These samples are shown in Figure 1 and summarized in Table 3. All other samples collected during this investigation were non-detect for LA and did not contain any visible vermiculite.

Vermiculite was not observed or detected in any of the samples collected from the fairways. Logbook notes and field sample data sheets are provided in Appendix B, and all soil sample results are presented in Table 1.

2.4 Dust Sampling

During the September 2004 sampling event, one dust sample, CS-18662, was collected from horizontal surfaces and high traffic areas of the pump house during the CVCC investigation. LA was not detected in this sample. Logbook notes and field sample data sheets are provided in Appendix B, and sample results are presented in Table 4.

Table 2. Summary of Soil Samples Collected in September 20004 that Contain LA.

Sample Index ID	Hole #	Location	Depth (inches bgs)	LA (%)	Comments on Visible Vermiculite
CS-18621	9	Green	0-12	TR	Vermiculite was observed in the center and eastern subsamples
CS-18623		Men's tee	0-8	TR	Visible tailings materials 4-8"bgs in subsamples
CS-18624		Women's tee	0-8	TR	No visible vermiculite
CS-18625	1	Men's tee	0-8	TR	No visible vermiculite
CS-18627		Green	0-12	TR	No visible vermiculite
CS-18630	2	Tee	0-8	TR	No visible vermiculite
CS-18631		Green	0-12	TR	No visible vermiculite
CS-18632		Green	12-24	TR	No visible vermiculite
CS-18635	3	Green	0-12	TR	No visible vermiculite
CS-18638	4	Green	0-12	TR	No visible vermiculite
CS-18640	5	Men's tee	0-8	TR	No visible vermiculite
CS-18642		Women's tee	0-8	TR	No visible vermiculite
CS-18643		Green	0-12	TR	No visible vermiculite
CS-18645	6	Men's long tee	0-8	TR	No visible vermiculite
CS-18646*		Men's long tee	0-8	TR	No visible vermiculite
CS-18648		Women's tee	0-8	TR	No visible vermiculite
CS-18649	6	Green	0-12	TR	No visible vermiculite
CS-18652	7	Women's tee	0-8	TR	Few vermiculite flakes visible in 1 subsample
CS-18653		Green	0-12	TR	Vermiculite visible 4-8"bgs in 3
CS-18654		Green	12-24	TR	No visible vermiculite
CS-18656	8	Men's tee	0-8	TR	No visible vermiculite
CS-18657		Green	0-12	TR	No visible vermiculite
CS-18658		Green	12-24	TR	No visible vermiculite
CS-18661	1	Tee and practice	0-8	TR	No visible vermiculite

*Duplicate sample of CS-18645; bgs – below ground surface; TR – trace (<0.02%)

Table3. Summary of Soil Samples Collected in December 20004 that Contain LA .

Sample Index ID	Hole #	Location	Depth (inches bgs)	LA (%)	Comments on Visible Vermiculite
CS-18681	1	Men's tee	0-1	TR	No visible vermiculite
CS-18697	5	Men's tee	0-1	TR	No visible vermiculite
CS-18699		Women's	0-1	TR	No visible vermiculite
CS-18704	6	Men's long	0-1	TR	No visible vermiculite
CS-18705		Men's short	0-1	TR	No visible vermiculite
CS-18706		Women's	0-1	TR	No visible vermiculite
CS-18714	8	Women's	0-1	TR	No visible vermiculite
CS-18718	9	Men's tee	0-1	<1	Vermiculite observed
CS-18719		Women's	0-1	<1	No visible vermiculite

bgs – below ground surface; TR – trace (<0.2%)

Section 3

Quality Assurance/Quality Control

CDM has established a formal quality assurance program to ensure consistently high quality project deliverables under its Response Action Contract with EPA. For work conducted by CDM in Libby, quality assurance/quality control (QA/QC) measures include the collection of quality control (QC) samples (such as soil duplicate samples and equipment blanks), implementation of a laboratory quality assurance program, review of project reports by a CDM-approved quality assurance staff member, and an auditing component to assess the effectiveness of the quality assurance program. The following sections describe deviations from the SAP Addendum and the implications of those deviations on project or data quality objectives.

3.1 Deviations from the Sampling and Analysis Plan Addendum

All requirements detailed in the SAP Addendum were met without exceptions.

3.2 Achievement of Data Quality Objectives

The data quality objectives of this investigation were met.

3.3 Data Validation and Reporting

None of the analytical data contained in this report was further validated beyond that performed by the laboratory as part of their QA/QC program. Therefore, it is assumed that the raw data are useable for their intended purpose, which is to determine the extent of LA asbestos contamination at the CVCC.

Section 4

References

CDM. 2003. Final Sampling and Analysis Plan, Remedial Investigation, Libby Asbestos Site, Operable Unit 4. May.

_____. 2004a. Sampling and Analysis Plan Addendum for the Cabinet View Country Club. July.

_____. 2004b. Close Support Facility, Soil Preparation Plan (Revision No. 1), Libby, Montana Asbestos Project, Sample Processing. March.

SRC. 2003. Analysis of Asbestos Fibers in Soil by Polarized Light Microscopy. SRC-LIBBY-03 (Rev. 0). March 3, 2003.

Table 1 Results of Soil Samples Collected During Investigations at CVCC

Sample ID	Parent ID	Property Group (Location)	Location Description (Sub Location)	Media Type	Matrix	Category	Sample Date	PLM				
								Method	LA Bin	LA (%)	C (%)	
CS-18555-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #3 tee-box (upper)	Soil-Like	Surface soil	Field Sample	6/4/2004	PLM-VE	B1	TR		ND
CS-18556-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #3 tee-box (lower)	Soil-Like	Surface soil	Field Sample	6/4/2004	PLM-VE	A	ND		ND
CS-18621-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #9 green	Soil-Like	Surface soil	Field Sample	9/27/2004	PLM-VE	B1	TR		ND
CS-18622-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #9 green	Soil-Like	Subsurface soil	Field Sample	9/27/2004	PLM-VE	A	ND		ND
CS-18623-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #9 men's tee	Soil-Like	Surface soil	Field Sample	9/27/2004	PLM-VE	B1	TR		ND
CS-18624-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #9 women's tee (combined)	Soil-Like	Surface soil	Field Sample	9/27/2004	PLM-VE	B1	TR		ND
CS-18625-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #1 men's short tee	Soil-Like	Surface soil	Field Sample	9/27/2004	PLM-VE	B1	TR		TR
CS-18626-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #1 women's short tee	Soil-Like	Surface soil	Field Sample	9/27/2004	PLM-VE	A	ND		ND
CS-18627-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #1 green	Soil-Like	Surface soil	Field Sample	9/27/2004	PLM-VE	B1	TR		ND
CS-18628-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #1 green	Soil-Like	Subsurface soil	Field Sample	9/27/2004	PLM-VE	A	ND		ND
CS-18630-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #2 tee	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18631-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #2 green	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18632-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #2 green	Soil-Like	Subsurface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18633-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #11 green	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	A	ND		TR
CS-18634-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #11 green	Soil-Like	Subsurface soil	Field Sample	9/28/2004	PLM-VE	A	ND		ND
CS-18635-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #3 green	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18636-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #3 green	Soil-Like	Subsurface soil	Field Sample	9/28/2004	PLM-VE	A	ND		ND
CS-18637-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #4 tee box	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	A	ND		ND
CS-18638-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #4 green	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18639-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #4 green	Soil-Like	Subsurface soil	Field Sample	9/28/2004	PLM-VE	A	ND		ND
CS-18640-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #5 men's tee	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18641-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #5 women's short tee	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	A	ND		ND
CS-18642-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #5 women's long tee	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18643-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #5 green	Soil-Like	Surface soil	Field Sample	9/28/2004	PLM-VE	B1	TR		ND
CS-18644-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #5 green	Soil-Like	Subsurface soil	Field Sample	9/28/2004	PLM-VE	A	ND		ND
CS-18645-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #6 men's long tee	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR		ND

Table 1 Results of Soil Samples Collected During Investigations at CVCC

Sample ID	Parent ID	Property Group (Location)	Location Description (Sub Location)	Media Type	Matrix	Category	Sample Date	PLM			
								Method	LA Bin	LA (%)	C (%)
CS-18646-FG1	CS-18645	378 Cabinet View Rd - Cabinet View Country Club	Hole #6 men's long tee	Soil-Like	Surface soil	Field Duplicate	9/29/2004	PLM-VE	B1	TR	ND
CS-18647-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #6 men's short tee	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	A	ND	ND
CS-18648-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #6 women's tee box	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18649-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #6 green	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18650-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #6 green	Soil-Like	Subsurface soil	Field Sample	9/29/2004	PLM-VE	A	ND	ND
CS-18651-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #7 men's long tee box	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	A	ND	ND
CS-18652-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #7 Womens short	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18653-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #7 green	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18654-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #7 green	Soil-Like	Subsurface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18655-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #8 women's tee box	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	A	ND	ND
CS-18656-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #8 man's tee box	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18657-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #8 green	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18658-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #8 green	Soil-Like	Subsurface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18659-FG1		378 Cabinet View Rd - Cabinet View Country Club	bunker sand pile	Soil-Like	Stockpile	Field Sample	9/29/2004	PLM-VE	A	ND	ND
CS-18660-FG1	CS-18659	378 Cabinet View Rd - Cabinet View Country Club	bunker sand pile	Soil-Like	Stockpile	Field Duplicate	9/29/2004	PLM-VE	A	ND	ND
CS-18661-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #1 tee box & practice green	Soil-Like	Surface soil	Field Sample	9/29/2004	PLM-VE	B1	TR	ND
CS-18663-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #3 women's tee	Soil-Like	Surface soil	Field Sample	9/30/2004	PLM-VE	A	ND	ND
CS-18681-FG1		378 Cabinet View Rd - Cabinet View Country Club	Hole #1 Tee	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	B1	TR	ND
CS-18682-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #1	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18683-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #1	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18684-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #1	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18685-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #1	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18686-FG1		378 Cabinet View Rd - Cabinet View Country Club	TEE #2	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18687-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #2	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18688-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #2	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18689-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #2	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND

Table 1 Results of Soil Samples Collected During Investigations at CVCC

Sample ID	Parent ID	Property Group (Location)	Location Description (Sub Location)	Media Type	Matrix	Category	Sample Date	PLM			
								Method	LA Bin	LA (%)	C (%)
CS-18690-FG1		378 Cabinet View Rd - Cabinet View Country Club	TEE #3 ladies	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18691-FG1		378 Cabinet View Rd - Cabinet View Country Club	TEE #3 mens	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18692-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #3	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18693-FG1		378 Cabinet View Rd - Cabinet View Country Club	TE #4	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18694-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #4	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18695-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #4	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18696-FG1		378 Cabinet View Rd - Cabinet View Country Club	#4 fairway	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18697-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #5	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	B1	TR	ND
CS-18698-FG1		378 Cabinet View Rd - Cabinet View Country Club	#5 tee	Soil-Like	Surface soil	Field Sample	12/10/2004	PLM-VE	A	ND	ND
CS-18699-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #5	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B1	TR	ND
CS-18700-FG1		378 Cabinet View Rd - Cabinet View Country Club	#5 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18701-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #5	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18702-FG1		378 Cabinet View Rd - Cabinet View Country Club	#5 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18703-FG1		378 Cabinet View Rd - Cabinet View Country Club	#5 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18704-FG1		378 Cabinet View Rd - Cabinet View Country Club	#6 Tee	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B1	TR	ND
CS-18705-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #6	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B1	TR	ND
CS-18706-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #6	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B1	TR	ND
CS-18707-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #6	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18708-FG1		378 Cabinet View Rd - Cabinet View Country Club	#6 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18709-FG1		378 Cabinet View Rd - Cabinet View Country Club	#6 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18710-FG1		378 Cabinet View Rd - Cabinet View Country Club	#7 Tee	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18711-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #7	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18712-FG1		378 Cabinet View Rd - Cabinet View Country Club	#7 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18713-FG1		378 Cabinet View Rd - Cabinet View Country Club	#8 Tee	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND
CS-18714-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #8	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B1	TR	ND
CS-18715-FG1		378 Cabinet View Rd - Cabinet View Country Club	#8 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND

Table 1 Results of Soil Samples Collected During Investigations at CVCC

Sample ID	Parent ID	Property Group (Location)	Location Description (Sub Location)	Media Type	Matrix	Category	Sample Date	PLM				
								Method	LA Bin	LA (%)	C (%)	
CS-18716-FG1		378 Cabinet View Rd - Cabinet View Country Club	Fairway #8	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-18717-FG1		378 Cabinet View Rd - Cabinet View Country Club	#8 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-18718-FG1		378 Cabinet View Rd - Cabinet View Country Club	Tee #9	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B2	< 1	ND	
CS-18719-FG1		378 Cabinet View Rd - Cabinet View Country Club	#9 Tee	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	B2	< 1	ND	
CS-18720-FG1		378 Cabinet View Rd - Cabinet View Country Club	#9 drop area	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-20002-FG1		378 Cabinet View Rd - Cabinet View Country Club	#9 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-20003-FG1		378 Cabinet View Rd - Cabinet View Country Club	#9 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-20004-FG1		378 Cabinet View Rd - Cabinet View Country Club	#9 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-20005-FG1		378 Cabinet View Rd - Cabinet View Country Club	#9 fairway	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	
CS-20006-FG1		378 Cabinet View Rd - Cabinet View Country Club	#1 ladies tee	Soil-Like	Surface soil	Field Sample	12/13/2004	PLM-VE	A	ND	ND	

Notes:

Samples with LA Detected

PLM - polarized light microscopy

VE- visual estimation

LA- Libby amphibole

C- Chrysotile

FG1- fine ground fraction

TR- Trace

ND- Non-detect

Table 2. Summary of Soil Samples Collected in September 2004 that Contain LA.

Sample Index ID	Hole #	Location	Depth (inches bgs)	LA (%)	Comments on Visible Vermiculite
CS-18621	9	Green	0-12	TR	Vermiculite was observed in the center and eastern subsamples
CS-18623		Men's tee	0-8	TR	Visible tailings materials 4-8"bgs in subsamples
CS-18624		Women's tee	0-8	TR	No visible vermiculite
CS-18625	1	Men's tee	0-8	TR	No visible vermiculite
CS-18627		Green	0-12	TR	No visible vermiculite
CS-18630	2	Tee	0-8	TR	No visible vermiculite
CS-18631		Green	0-12	TR	No visible vermiculite
CS-18632		Green	12-24	TR	No visible vermiculite
CS-18635	3	Green	0-12	TR	No visible vermiculite
CS-18638	4	Green	0-12	TR	No visible vermiculite
CS-18640	5	Men's tee	0-8	TR	No visible vermiculite
CS-18642		Women's tee	0-8	TR	No visible vermiculite
CS-18643		Green	0-12	TR	No visible vermiculite
CS-18645	6	Men's long tee	0-8	TR	No visible vermiculite
CS-18646*		Men's long tee	0-8	TR	No visible vermiculite
CS-18648		Women's tee	0-8	TR	No visible vermiculite
CS-18649	6	Green	0-12	TR	No visible vermiculite
CS-18652	7	Women's tee	0-8	TR	Few vermiculite flakes visible in 1 subsample
CS-18653		Green	0-12	TR	Vermiculite visible 4-8"bgs in 3
CS-18654		Green	12-24	TR	No visible vermiculite
CS-18656	8	Men's tee	0-8	TR	No visible vermiculite
CS-18657		Green	0-12	TR	No visible vermiculite
CS-18658		Green	12-24	TR	No visible vermiculite
CS-18661	1	Tee and practice	0-8	TR	No visible vermiculite

*Duplicate sample of CS-18645; bgs – below ground surface; TR – trace (<0.2%)

Table 4 Results of Dust Samples Collected During Investigations at CVCC

Sample ID	Property Group (Location)	Sample Group	Location Description (Sub Location)	Media Type	Matrix	Sample Type	Category	Area (cm ²)	Sample Date	AHERA / ASTM 5755																	
										Filter Status Non Analyzed	Libby Amphiboles (LA)				Chrysotile (C)				Other Amphiboles (OA)				Total Asbestos				
											S<5u	S>5u	Asb load (S/mm2)	Asb conc (Dust = S/cm ²)	S<5u	S>5u	Asb load (S/mm ²)	Asb conc (Dust = S/cm ²)	S<5u	S>5u	Asb load (S/mm2)	Asb conc (Dust = S/cm ²)	Asbestos Type Identified	S<5u	S>5u	Asb load (S/mm2)	Asb conc (Dust = S/cm ²)
CS-18662	1260 Cabinet Heights Rd	Pumphouse	Ground floor	Dust	Horizontal surface & high traffic area		Field Sample	300	9/30/2004		0	0	< 258.74	< 332	0	0	< 258.74	< 332	0	0	< 258.74	< 332		0	0	< 260.00	< 330

Notes:

LA- Libby Amphibole
C- Chrysotile
OA- Other Amphiboles
S/mm²- structures per millimeter squared

S/cm²- structures per centimeter
cm²- centimeter squared
<- less than

Section 4

References

CDM. 2003. Final Sampling and Analysis Plan, Remedial Investigation, Libby Asbestos Site, Operable Unit 4. May.

_____. 2004a. Sampling and Analysis Plan Addendum for the Cabinet View Country Club. July.

_____. 2004b. Close Support Facility, Soil Preparation Plan (Revision No. 1), Libby, Montana Asbestos Project, Sample Processing. March.

SRC. 2003. Analysis of Asbestos Fibers in Soil by Polarized Light Microscopy. SRC-LIBBY-03 (Rev. 0). March 3, 2003.

Section 3

Quality Assurance/Quality Control

CDM has established a formal quality assurance program to ensure consistently high quality project deliverables under its Response Action Contract with EPA. For work conducted by CDM in Libby, quality assurance/quality control (QA/QC) measures include the collection of quality control (QC) samples (such as soil duplicate samples and equipment blanks), implementation of a laboratory quality assurance program, review of project reports by a CDM-approved quality assurance staff member, and an auditing component to assess the effectiveness of the quality assurance program. The following sections describe deviations from the SAP Addendum and the implications of those deviations on project or data quality objectives.

3.1 Deviations from the Sampling and Analysis Plan Addendum

All requirements detailed in the SAP Addendum were met without exceptions.

3.2 Achievement of Data Quality Objectives

The data quality objectives of this investigation were met.

3.3 Data Validation and Reporting

None of the analytical data contained in this report was further validated beyond that performed by the laboratory as part of their QA/QC program. Therefore, it is assumed that the raw data are useable for their intended purpose, which is to determine the extent of LA asbestos contamination at the CVCC.

Appendix A

Verbal Interview Documentation

BD- 004343

LIBBY ASBESTOS PROJECT
"Contaminant Screening Study"
Secondary Structure Information Field Form (Secondary IFF)

Field Logbook No.: 100386 Page No.: 17 Site Visit Date: 9/30/04
 Address: 1260 Cabaret Heights Rd Structure Description: pump house
 Occupant: CVCC Phone Number: 406.293.2707
 Owner (if different than occupant): CVE TC 9/30/04 Phone Number: _____
 Business Name: CVCC
 Sampling Team: Timmy Cook / Terry Crowell
 Field Form Check Completed by (100% of forms): _____
 Screening Field Check Completed by (2% of forms): _____

Data Item	Value	Notes
STRUCTURE ATTRIBUTES		
Property Description	Residential Industrial <u>Commercial</u>	<u>pump house is leased by CVCC</u>
Surrounding Land Use	<u>Residential</u> Industrial Commercial School Mining Other: _____	
Year of Construction	<u>pre-1950s</u> <u>Unknown</u>	
Square Footage	<u>240</u>	
Construction Material	Wood frame Masonry/Stone <u>Other cinderblock</u>	
Number of Floors Above Ground	<u>1</u> 2 3 Other: _____	
Number of Rooms Per Floor Above Ground	1: <u>2</u> <u>2</u> TC <u>9/30/04</u> 3: _____ Other: _____	
Basement	Yes <u>No</u>	
Heating Source	Wood/Coal <u>Electric</u> Propane/Gas <u>NA</u> TC <u>9/30/04</u> Other: _____	
Heat Distribution	Forced air <u>Radiant</u> <u>NA</u> TC <u>9/30/04</u> Other: _____	
Was the building remodeled?	Yes <u>No</u>	

CSS Secondary Structure IFF (continued)

Address: 1260 cabinet Heights RdBD# BD-004343

Data Item	Value	Notes
CONTAMINANT SCREENING STUDY ASSESSMENT		
Occupant Information		<input type="checkbox"/> Verbal Interview Complete: _____
Is there any knowledge of former miners, close relatives of miners, or any highly exposed persons living or visiting the property?	Yes <u>Unknown</u>	No If unknown, why? <u>- BUSINESS</u>
Is the resident, past or present, diagnosed with an asbestos-related disease?	Yes <u>Unknown</u>	No If unknown, why? <u>- BUSINESS</u>
Indoor Information		<input type="checkbox"/> Indoor Visual Inspection Complete: _____
Does the interior have vermiculite attic insulation?	<u>Yes</u> <u>No</u> <u>TEC 9/30/04</u> Unknown	If unknown, why? <u>REMANANT VCI 1/2"</u>
Did the interior ever have vermiculite attic insulation? NA applies if attic currently has VCI	<u>Yes</u> <u>No</u> Unknown NA	If unknown, why?
Are there vermiculite additives in any of the building materials?	Yes <u>No</u> Unknown	If unknown, why? Type and location of building material:
Location of indoor vermiculite (circle all that apply)	<u>Attic</u> <u>Walls</u> Crawl Space None Visual in Living Space: Basement, <u>Ground Floor</u> Second Floor, Attached Garage Other: _____	If in living space, provide specific location: <u>- ATTIC IN NE SECTION</u> <u>- WALLS AROUND ORIGINAL (REMANANT SIFT) SECTION</u> <u>- GF VISIBLE IN ORIGINAL SECTION</u>
ADDITIONAL INFORMATION (Note any partial access or sample collection issues) <u>Appears there is approx 1/2" of VCI in attic.</u>		

ORIGINAL

ADD ON

REVISED

BD- 004342

= Soil samples collected (Date: _____)

LIBBY ASBESTOS PROJECT
Contaminant Screening Study
Primary Structure and Property Assessment Information Field Form (Primary IFF)

Field Logbook No.: 100386 Page No.: 17 Site Visit Date: 9/30/04
 Address: 378 Cabinet View County Club Rd Structure Description: clubhouse
 Occupant: CVCC 378 Cabinet View Rd Phone Number: 406-293-2707
 Owner (if different than occupant): Jo 10/7/04 Phone Number: _____
 Business Name: CVCC
 Sampling Team: Terry Crowell / Tommy Cook
 Field Form Check Completed by (100% of forms): _____
 Screening Field Check Completed by (2% of forms): _____

Date Item	Value	Notes
HOUSE ATTRIBUTES		
Property Description	Residential Industrial <u>Commercial</u>	
Surrounding Land Use	<u>Residential</u> Industrial Commercial School Mining Other: _____	
Year of Construction	<u>~ 1970s</u> Unknown	
Square Footage	<u>4000</u>	<u>main floor + basement</u>
Construction Material	<u>Wood frame</u> Masonry/Stone Other: _____	
Number of Floors Above Ground	<u>1</u> 2 3 Other: _____	
Number of Rooms Per Floor Above Ground	1: <u>3</u> 2: _____ 3: _____ Other: _____	
Basement	<u>Yes</u> No	
Heating Source	Wood/Coal Electric <u>Propane/Gas</u> Other: _____	
Heat Distribution	<u>Forced air</u> Radiant Other: _____	

CSS Primary Structure (PF (continued))

Address: _____

BD# 004342

Data Item	Value	Notes
OCCUPANT INFORMATION		
Was the residence/building remodeled?	<input checked="" type="radio"/> Yes <input type="radio"/> No If yes, When (years): <2 2-5 >5 Where: Attic Living Areas Garage Basement Other: <u>ADD FEW YEARS LATER</u>	
Has resident/business purchased any Libby vermiculite materials from W.R. Grace in the past?	Yes <input checked="" type="radio"/> No <u>PER RY RENT</u>	<u>SOME VERMICULITE BROUGHT IN AS FILL FOR TBS/CREOS</u>
Has the property at this location been used for a for-profit enterprise of distributing, treating, storing, or disposing of Libby vermiculite?	Yes <input checked="" type="radio"/> No	
CONTAMINANT SCREENING STUDY ASSESSMENT		
Occupant Information		<input checked="" type="checkbox"/> Verbal Interview Complete: _____
Is there any knowledge of former miners, close relatives of miners, or any highly exposed persons living or visiting the property?	<input checked="" type="radio"/> Yes <input checked="" type="radio"/> No <u>7/30/04</u> Unknown	If unknown, why?
Is the resident, past or present, diagnosed with an asbestos-related disease?	Yes <input checked="" type="radio"/> No Unknown	If unknown, why?
Indoor Information		<input checked="" type="checkbox"/> Indoor Visual Inspection Complete: _____
Does the interior have vermiculite attic insulation?	Yes <input checked="" type="radio"/> No Unknown	If unknown, why?
Did the interior ever have vermiculite attic insulation?	Yes <input checked="" type="radio"/> No Unknown NA	If unknown, why?
NA applies if attic currently has VCI		
Are there vermiculite additives in any of the building materials?	Yes <input checked="" type="radio"/> No Unknown	If unknown, why? Type and location of building material:

Address: _____

BD# 004342

Data Item	Value	Notes
Location of indoor vermiculite (circle all that apply)	Attic Walls Crawl Space <u>None</u> Visual in Living Space: Basement, Ground Floor, Second Floor, Attached Garage Other: _____	If in living space, provide specific location:
Outdoor Information		<input type="checkbox"/> Outdoor Visual Inspection Complete: _____
Location of outdoor vermiculite (circle all that apply)	Driveway Flowerbed Garden Yard Former Flowerbed Former Garden Stockpile <u>None</u> Other: <u>House 9, 1, 7 @ depth</u>	<u>See LOGBOOK</u> <u>AND FSDS FOR</u> <u>ADDITIONAL INFO</u>
Overall Assessment Complete: _____ <input checked="" type="checkbox"/> Reconnaissance (Verbal Interview, Indoor, Outdoor Inspection)		
Are primary source materials present at the property?	<input checked="" type="radio"/> Yes <input type="radio"/> No	<u>- Pump House HAS VCI</u> <u>- UNDER #9 PILE, #1 TEE</u>
Where are primary source materials located?	<input checked="" type="radio"/> Inside <input type="radio"/> Outside <input checked="" type="radio"/> Both <input type="radio"/> NA	NA applies if no primary source materials are located at the property.
ADDITIONAL INFORMATION (Note any partial access or sample collection issues) <u>VERMICULITE OBSERVED</u> <u>ONLY AT DEPTH, THERE WAS A FEW FLAKES OBSERVED ON THE SURFACE</u> <u>OF HOUSE 3 @ E SANDPIT ON E SIDE.</u>		

CSS Primary Structure IFF (continued)

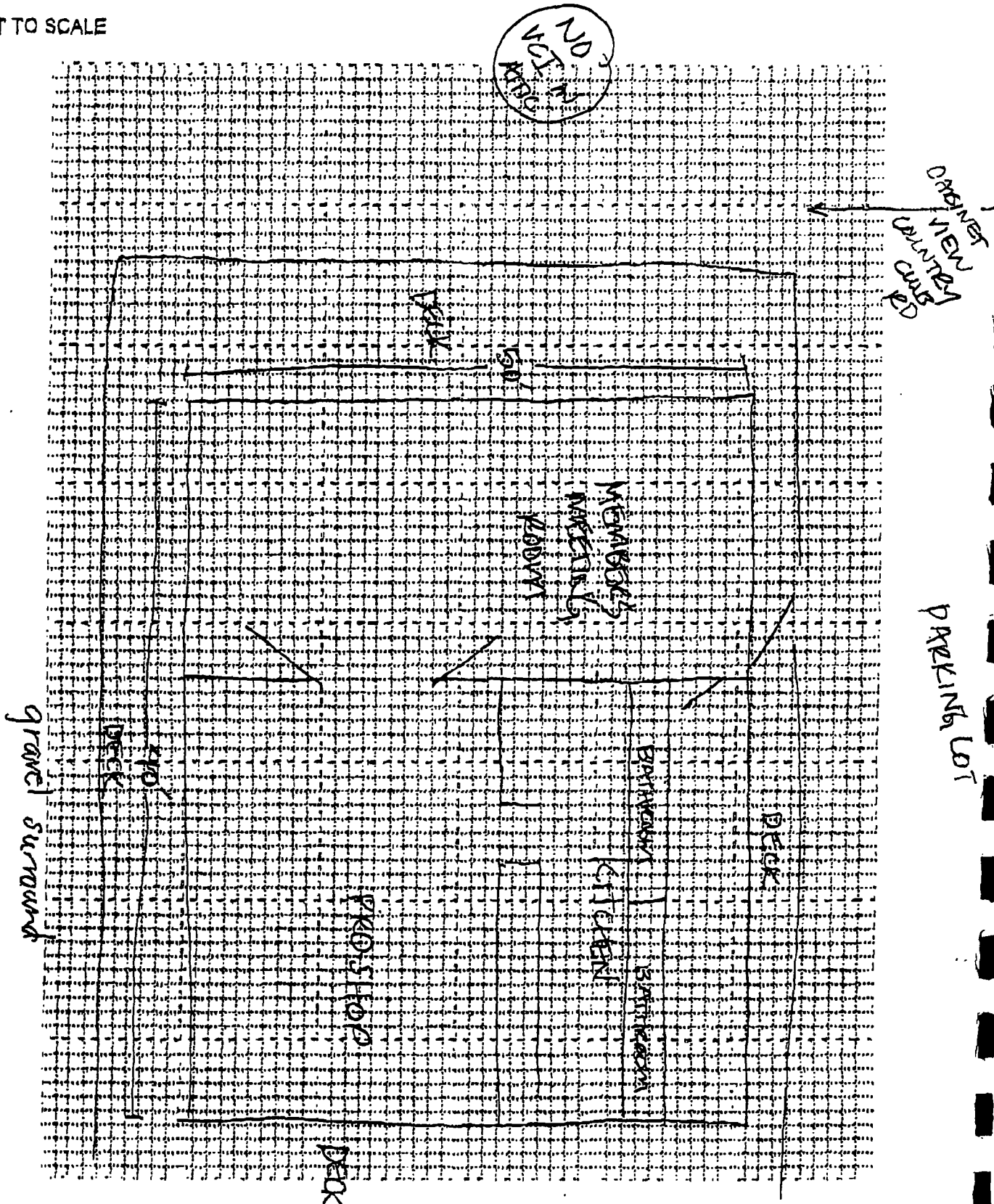
Address: 378 Cabinet View Country Club Rd

SD# 004342

FIELD DIAGRAM OF PROPERTY

Identify important features (i.e. drainage, trees, gardens, structures, flowerbeds, utility poles, known underground utilities, suspected Libby amphibole source areas, sample locations, etc). Include north arrow.

NOT TO SCALE



Appendix B
Field Log Notes and
Field Sample Data Sheets

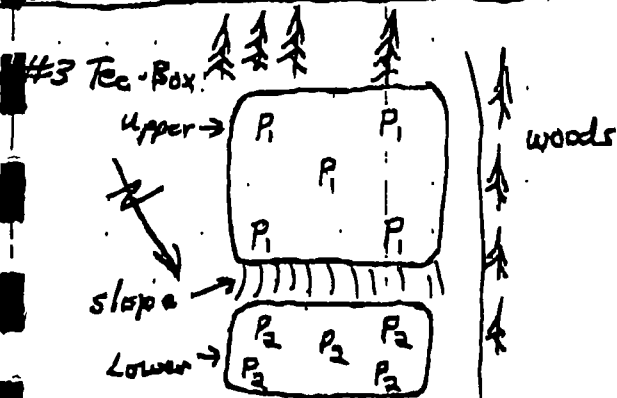
June 2004 Sampling Event

CDM

Location Cabinet View Country Club Date 6-4-04 77
 Project / Client Likely Asbestos US EPA Region 8
Cabinet View Country Club

0902: Arrive @ golf course to conduct soil sampling on the hole #3 tee-box.
 All work IAW CSS SAP Revision 1, 2003.
 B. Sharp (author) and T. Senti onsite.
 No L.U. is observed in the soils of the upper or lower teebox at hole #3. The material in question was obviously micaceous native sand, produced from glacial deposits.
 Soil samples on FSDS-000164 are as follows:

Property (P1)	CS-18555	Hole #3
Upper tee-box	SP-124957	
Property (P2)	CS-18556	Hole #3
Lower tee-box	SP-124958	



Sheet No.: S- 000164

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100329 Page No: 77 Sampling Date: 6-4-04
 Address: 328 Cabinet View Rd. Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Golf Course
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: B. Shroy, Tony Sisti

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18555	CS- 18556	
Location ID	SP- 124957	SP- 124958	
Sample Group	<u>Property (P₁)</u>	<u>Property (P₂)</u>	
Location Description (circle) -	Back yard Front yard Side yard Driveway Other <u>#3 tee-box (upper)</u>	Back yard Front yard Side yard Driveway Other <u>#3 tee-box (lower)</u>	Back yard Front yard Side yard Driveway Other
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	Surface Soil Other _____
Type (circle)	Grab <u>Comp</u> # subsamples <u>5</u>	Grab <u>Comp</u> # subsamples <u>5</u>	Grab Comp. # subsamples _____
Sample Time	<u>0922</u>	<u>0930</u>	
Top Depth (in.)	<u>0</u>	<u>0</u>	
Bottom Depth (in.)	<u>8</u>	<u>8</u>	
Field Comments Note if vermiculite is visible in sampled area	BD- <u>NA</u> <u>No L.V. observed in sample</u>	BD- <u>NA</u>	BD- _____
Entered (LFO) _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by BS

QC by

September 2004 Sampling Event

CDM

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CSS Investigation	
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CABINET	NEW COUNTRY CLUB
	28104 -

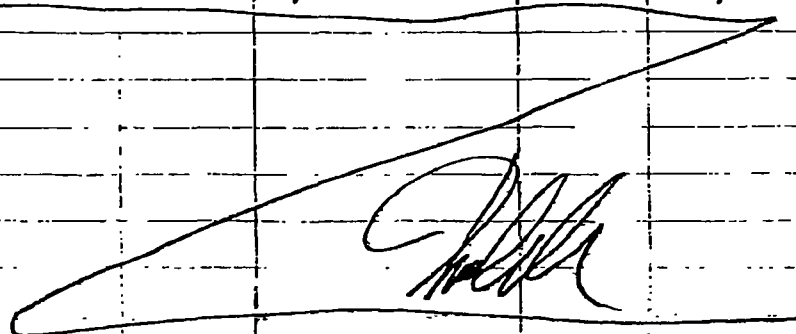
4 1/2" x 7" - 48 Number 1 Pages



2

CABINET VIEW COUNTRY CLUB (CVCC) 9/27/09

THE PURPOSE OF THIS LOGBOOK IS TO DOCUMENT THE SAMPLING AND INVESTIGATIVE EFFORTS AT THE CABINET VIEW COUNTRY CLUB, HEREON REFERRED TO AS CVCC, INCLUDING SOIL SAMPLING AND VISUAL INSPECTIONS. THE SAMPLING TEAM WILL CONSIST OF TWO (2) CDM FIELD TEAM MEMBERS, THOMAS COOK (AUTHOR) AND TERRY CROWELL. IN ADDITION, 2 CVCC EMPLOYEES WILL BE ACCOMPANYING COOK AND CROWELL DURING SOIL SAMPLING TO REPAIR HOLES CAUSED DURING EXTRACTION. ALL INVESTIGATION ACTIVITIES WILL BE DONE IN ACCORDANCE WITH (IAW) THE FINAL SAMPLING AND ANALYSIS PLAN ADDENDUM FOR THE CABINET VIEW COUNTRY CLUB. ALL PPE WILL INCLUDE MODIFIED LEVEL D FOR SOIL SAMPLING AND MODIFIED D/C FOR BUILDING INSPECTIONS.



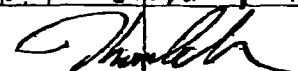
3

9/27/09

CVCC

0630 - ARRIVE (COOK: CROWELL) AT THE CDM OFFICE @ THE OLD SIMMONS FACILITY TO GATHER FIELD SAMPLING SUPPLIES AND EQUIPMENT. PACKED TOGETHER HEALTH AND SAFETY EQUIPMENT AND SUBSURFACE SOIL EXTRACTION EQUIPMENT. SUBSURFACE SOIL SAMPLES WILL BE EXTRACTED USING A HAND-DRIVEN GEOPROBE. ACETONITRILE LINERS WILL BE USED RE: 9/27/09 TO MINIMIZE GROUND CONTAMINATION. COMPOSITE SOIL SAMPLES WILL BE MIXED IN A METAL SAMPLING BOWL AS OUTLINED IN THE FINAL SAMPLING AND ANALYSIS PLAN, REMEDIAL INVESTIGATION CONTAMINANT SCREENING STUDY, REVISION 1, MAY 2003. ~~OK~~

CROWELL puts TOGETHER ALL FIELD SAMPLING WITH SUPPLIES FOR SAMPLING. 0842 - LEAVE CDM OFFICE AND GO TO SPRE FOR FERTILIZERS. NEED TO GO BY NORTON FERTILIZATION SHOP TO REPAIR GEOPROBE. 0900 - ARRIVE @ CABINET VIEW COUNTRY CLUB (CVCC). TALK WITH RAY REPP AND MIKE.



4

CVCC

9/27/04

COLLECT AND DISCUSS THE SAMPLING EVENT.

1100 - LEAVE CLUBHOUSE FOR HOLE #9...

1124 Collect CS-18621, HOLE 9 GREEN

SOIL SAMPLE 0-12" - VISIBLE VERMIL IN UPPER

3 INCHES. SEE FSDS S-000518 FOR ADD. INFO.

1124 Collect CS-18622, HOLE 8/12/27/04 9

GREEN SUBSURFACE 12-14" NO VISIBLE VERMIL

1340 Collect CS-18623 FROM HOLE 9 MEN'S TEE.

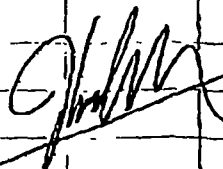
SEE FSDS-000518 FOR ADD. INFO. — 2X

* SEE THE FOLLOWING INFORMATION REGARDING

SAMPLE COLLECTION: — 950

TIME	INDEX ID	FSDS	DESCRIPTION
1440	CS-18624	S-000519	HOLE 9, WOMEN'S TEE
1520	CS-18625	↓	HOLE 1, MEN'S TEE
1550	CS-18626	↓	HOLE 1, WOMEN'S TEE
1650	CS-18627	S-000520	HOLE 1 GREEN
1650	CS-18628	"	HOLE 1 GREEN

END - FINANCIAL DAYS WORK CONFIRM SOIL
SAMPLES. LEAVE SITE FOR DAY. NO FURTHER
INFOS



5

9/28/04

CVCC

0730 Cook AND CRAWFORD ARRIVE @ THE

COM OFFICE. Cook IS THE AUTHOR.

THE WEATHER IS ~ 45°F → 80°F, CLEAR.

TODAY'S ACTIVITIES WILL BE CONTINUING SAMPLING

ACTIVITIES AT CVCC. SEE PG 2 FOR CONT.

DOCUMENTS. — 950

0800 ARRIVE @ CVCC, MEET Ray & Mike

LOAD UP GOLF CART FOR SAMPLING.

TIME	INDEX ID	FSDS	DESCRIPTION
0820	CS-18630	S-000521	HOLE 2 TEE
0849	CS-18631	↓	HOLE 2 GRN
0849	CS-18632	↓	HOLE 2 GRN
0949	CS-18633	S-000522	HOLE 1 GRN
0949	CS-18634	↓	HOLE 1 GRN
1035	CS-18635	↓	HOLE 3 GRN
1035	CS-18636	S-000523	HOLE 3 GRN
1225	CS-18637	↓	HOLE 4 TEE
1258	CS-18638	↓	HOLE 4 GRN
1258	CS-18639	S-000524	HOLE 4 GRN
1353	CS-18640	↓	HOLE 5 MEN'S TEE
1420	CS-18641	↓	HOLE 5 TEE
1450	CS-18642	S-000525	HOLE 5 MEN'S TEE
1545	CS-18643	↓	HOLE 5 GRN
1545	CS-18644	↓	HOLE 5 GRN

1630 - OFFSITE



6

CVCC

9/28/04

CONTINUE SAMPLING 9/28/04

TIME

0730 COOK AND CROWELL ARRIVE AT THE
CAM OFFICE TO PREPARE FOR TODAY'S
SAMPLE EVENT.Cook is the author. THE WEATHER IS ~45°F
TO A HIGH OF 75°F CLEAR AND SUNNY.SEE PG 2 FOR GUIDANCE DOCUMENT
PAE IS MODIFIED LEVEL D.

THE FOLLOWING SAMPLES ARE COLLECTED

TIME	INDEX ID	FSDS	DESCRIPTION
0832	CS-18645	S-000526	HOLE 6 MENS TEE LOW
0846	CS-18646	↓	HOLE 6 MENS TEE LOW
0855	CS-18647	↓	HOLE 6 MENS TEE SHOT
0918	CS-18648	S-000527	HOLE 6 WOMEN'S TEE
1005	CS-18649	↓	HOLE 6 GREEN
1005	CS-18650	↓	HOLE 5 GREEN
1037	CS-18651	S-000528	HOLE 7 MENS LOTES
1117	CS-18652	↓	HOLE 7
1202	CS-18653	↓	HOLE 7 GREEN
1202	CS-18654	S-000529	HOLE 7 GREEN
1250	BREAK FOR LUNCH		

9/29/04

CVCC

7

1330-BACK FROM LUNCH, CONTINUE SAMPLING

TIME	INDEX ID	FSDS	DESCRIPTION
1357	CS-18655	S-000529	HOLE 8 TEE BOX
1425	CS-18656	"	HOLE 8 MENS
1516	CS-18657	S-000530	HOLE 8 GRN
1516	CS-18658	↓	HOLE 8 GRN
1530	CS-18659	↓	8 BINKE SAND
1530	CS-18660	S-000568	8 BINKE SAND
1542	CS-18661	"	HOLE TEE BOX
1558	CS-18663	7/28/04	7/28/04

1600-GO BACK TO CLUBHOUSE AND RECALL
SAMPLE COUNTS.

1645- OFFS. TD

8

CVCC

9/30/04

0730 Cook AND CROWELL ARRIVE AT CDM OFFICE.
TODAY'S ACTIVITIES WILL BE CONTINUING
SAMPLE ACTIVITIES FOR THE CVCC EFFECT.

WEATHER IS ~45°F → 85°F, CLEAR/SUNNY
PPE - MODIFIED LEVEL D. — 9C

GUIDANCE DOCUMENT IS LISTED ON PG. 2.

- 750 - LOAD UP CAR AND HEAD TO CVCC.

- 0815 - MEET REMP AND GUNIER. DISCUSS THAT
TODAY WE WILL BE INSPECTING BUILDINGS
AND CWAHOUSE. STANDA FINISH SAMPLING
TODAY. — 9C

0922 - COLLECT CS-18663 SOIL. HELPS WANTED
SEE FSDS - S-00038 FOR ADDL INFO.

0930 - ARRIVE @ PUMPHOUSE & PERFORM A
SECONDARY IFF. ASSIGNED RD-004343.
SEE IFF FOR ADD INFO VCI REMAINS
OBSERVED. — 9C

DUST SAMPLES ARE COLLECTED IN THE
INTERIOR ROOMS OF THE PUMP HOUSE.

SEE FSDS D-000238 FOR ADDL INFO

0949 COLLECT CS-18662 DUST SAMPLE
3-PT COMPOSITE FROM PUMP HOUSE. — 9C

1113 - CHECK OTHER BUILDING FOR VCI

9

9/30/04

CVCC

THE EQUIPMENT SHED AND CLUB CART
SHED DOES NOT CONTAIN VCI.

UNABLE TO COLLECT SOIL SAMPLE FROM
PARKING LOT BECAUSE IT IS
PAVEMENT WITH CHIP GRAVEL ON TOP.
NO VERMICULITE OBSERVED. — 9C

- TOUR AROUND GOLF COURSE TO INSPECT
SUSPICIOUS AREAS (I.E. MOUNDS, UTILITY
BOXES, ETC.). NO VERMICULITE
OBSERVED. — 9C

1300 - LUNCH. — 9C

1345 - ARRIVE BACK AT CVCC CLUB
HOUSE TO PERFORM CES INSPECTION.

- COMPLETE IFF FOR CLUB HOUSE ASIGN
RD-004342. NO VCI OBSERVED. — 9C

- SEE IFF FOR DETAILS ON VERMICULITE
OBSERVED ON THE COURSE. — 9C

1545 - LEAVE CVCC AND HEAD TO CDM
OFFICE & DEBINGUISH STABLES.

- 1615 - COLLECT CS-18664 - SICKA SAND
EQUIPMENT BLANK. — 9C

- 1645 - DEBINGUISH STABLES TO P. STONE
SHIP EQUIPMENT OFFSITE. SAMPLING
COMPLETE. NO FURTHER ENTRIES.

Sheet No.: S- 000578

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 4 Sampling Date: 9/27/04
 Address: 379 Cabinet View Country Club Rd Owner/Tenant: Cabinet View Country Club (CVCC)
 Business Name: CVCC
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18621 <i>TC</i>	CS- 18622 <i>TC</i>	CS- 18623 <i>TC</i>
Location ID	SP- 125861 <i>TC</i>	SP-125861 <i>TC</i>	SP-125862 <i>TC</i>
Sample Group	property	property	property
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>Hole #9 Green</u>	Back yard Front yard Side yard Driveway Other <u>Hole #9 green</u>	Back yard Front yard Side yard Driveway Other <u>Hole #9 men's tee</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil) unless other wise noted)	<u>Surface Soil</u> 0-12" Other _____	<u>Surface Soil</u> 12-14" Other <u>subsurface soil</u>	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>
Sample Time	1124	1124	1340
Top Depth (In.)	0	12	0
Bottom Depth (in.)	12	24	8
Field Comments - Note if vermiculite is visible in sampled area	BD- <u>004342</u> visible in upper. 3" <i>N</i> * <i>TC</i> <i>see map</i>	BD- _____ none visible in any subsamples	BD- _____ visible tailings material 4-8" depth - see map for visible in subsamples
Entered (LFO) <i>TC</i>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

* = visible in subsample on map

For Field Team Completion
(Provide initials)

Completed by

TC

QC by

TJC

Sheet No.: S- 000578

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 5 Sampling Date: 9/27/04
 Address: 378 Cabinet View Country Club Rd Owner/Tenant: Cabinet View Country Club (CVCC)
 Business Name: CVCC
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Tommy Cook / Terry Crowell

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18624 <u>TC</u>	CS- 18625 <u>TC</u>	CS- 18626 <u>TC</u>
Location ID	<u>9/27/04</u> <u>SP-125863</u>	<u>9/27/04</u> <u>SP-125864</u>	<u>9/27/04</u> <u>SP-125865</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #9</u> <u>women's tee</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #1</u> <u>men's short tee</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #1</u> <u>women's short tee</u>
Category (circle)	<u>FS</u> (combined) FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp.</u> # subsamples <u>5</u>	Grab <u>Comp.</u> # subsamples <u>5</u>	Grab Comp. # subsamples <u>5</u>
Sample Time	<u>1440</u>	<u>1520</u>	<u>1550</u>
Top Depth (in.)	<u>0</u> <u>8 TC 9/27/04</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>8</u>	<u>8</u>	<u>8</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD- 004322</u> <u>none visible in any subsamples</u> <u>see map</u>	<u>BD- _____</u> <u>see map</u>	<u>BD- _____</u> <u>see map</u>
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

TCR

QC by

TCR

Sheet No.: S- 005520

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 7 Sampling Date: 9/27/04

Address: 378 Cabaret View Country Club Rd Owner/Tenant: CVCC

Business Name: CVCC

Land Use: Residential School Commercial Mining Roadway Other ()

Sampling Team: MACTEC CDM Other Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18627	CS- 18628	CS- 18629
Location ID	SP-125866	SP-125866	
Sample Group	property	property	
Location Description (circle)	Back yard Front yard Side yard Driveway Other Hole #1 green	Back yard Front yard Side yard Driveway Other Hole #1 green	Back yard Front yard Side yard Driveway Other
Category (circle)	FS FD of Field Blank (lot or equipment)	FS FD of Field Blank (lot or equipment)	FS FD of Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	Surface Soil Other	Surface Soil Other subsurface soil	Surface Soil Other
Type (circle)	Grab Comp. # subsamples 5	Grab Comp. # subsamples 5	Grab Comp. # subsamples
Sample Time	1650	1650	
Top Depth (In.)	0	12	
Bottom Depth (In.)	12	24	
Field Comments Note if vermiculite is visible in sampled area	BD- 004342 none visible in any subsamples.	BD-	BD-
Entered (LFO)	Volpe: Entered Validated	Volpe: Entered Validated	Volpe: Entered Validated

For Field Team Completion
(Provide initials)

Completed by

TC

QC by

TC

Sheet No.: S- 00000

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 8 Sampling Date: 9/28/04Address: 378 Cabinet View Country Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other _____ Names: Terry Council / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18630 <u>2</u>	CS- 18631 <u>2</u>	CS- 18632 <u>TC</u>
Location ID	<u>9/28/04</u> SP-125867	<u>9/28/04</u> SP-125868	<u>9/28/04</u> SP-125868
Sample Group	property	property	property
Location Description (circle)	Back yard Front yard Side yard Driveway <u>9/28/04</u> <u>Other</u> <u>Hole # 2 tee</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole # 2 green</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole # 2 green</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> <u>subsurface</u>
Type (circle)	Grab <u>Comp</u> # subsamples <u>5</u>	Grab <u>Comp</u> # subsamples <u>5</u>	Grab <u>Comp</u> # subsamples <u>5</u>
Sample Time	0820	0849	0849
Top Depth (in.)	0	0	12
Bottom Depth (in.)	8	12	24
Field Comments Note if vermiculite is visible in sampled area	BD- 00386 <u>00386</u> no visible vermiculite in any subsamples	BD- _____	BD- _____
Entered (LFO) <u>JP</u> <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

TC

QC by

TCL

Sheet No. S- 000520

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 8 Sampling Date: 9/28/04Address: 378 Cabinet View Country Club Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18633 ⁷² 9/28/04	CS- 18634 ⁷² 9/28/04	CS- 18635 ⁷² 9/28/04
Location ID	<u>SP-125869</u>	<u>SP-125869</u>	<u>SP-125870</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #11 green</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #11 green</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #3 green</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> <u>subsurface soil</u>	<u>Surface Soil</u> <u>Other</u> _____
Type (circle)	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>
Sample Time	<u>0949</u>	<u>0949</u>	<u>1035</u>
Top Depth (In.)	<u>0</u>	<u>12</u>	<u>0</u>
Bottom Depth (In.)	<u>12</u>	<u>24</u>	<u>12</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD-004342</u> <u>no visible vermiculite in any subsamples</u> →	<u>BD-</u> →	<u>BD-</u> →
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide initials)Completed by 72QC by TBR

Sheet No.: S- 000520

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 9 Sampling Date: 9/28/04Address: 378 Cabinet View County Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other _____ Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18636	CS- 18637	CS- 18638
Location ID	<u>SP-125870</u>	<u>SP-125871</u>	<u>SP-125872</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Hole #3 green</u>	Back yard Front yard Side yard Driveway <u>Other Hole #4 trebox</u>	Back yard Front yard Side yard Driveway <u>Other Hole #4 green</u>
Category (circle)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other subsurface soil</u>	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> <u>Comp. # subsamples 5</u>	<u>Grab</u> <u>Comp. # subsamples 5</u>	<u>Grab</u> <u>Comp. # subsamples 5</u>
Sample Time	<u>1035</u>	<u>1225</u>	<u>1258</u>
Top Depth (in.)	<u>12</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>24</u>	<u>8</u>	<u>12</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004346</u> no visible vermiculite in any subsamples	BD- _____	BD- _____
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

TC

QC by

TBL

Sheet No: S- 000522

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 1012386 Page No: 10 Sampling Date: 9/28/04
 Address: 378 Cabinet view country Club Rd Owner/Tenant: CVCC
 Business Name: CVCC
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MAQTEC CDM Other _____ Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18639 <i>z</i>	CS- 18640 <i>z</i>	CS- 18641 <i>z</i>
Location ID	<u>SP-125872</u> <i>9/28/04</i>	<u>SP-125873</u> <i>9/28/04</i>	<u>SP-125874</u> <i>9/28/04</i>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Hole #4 green</u>	Back yard Front yard Side yard Driveway <u>Other Hole #5 mens tee</u>	Back yard Front yard Side yard Driveway <u>Other Hole #5 womens short-tee</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other subsurface soil</u>	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> <u>Comp. # subsamples 5</u>	<u>Grab</u> <u>Comp. # subsamples 5</u>	<u>Grab</u> <u>Comp. # subsamples 5</u>
Sample Time	<u>1258</u>	<u>1353</u>	<u>1420</u>
Top Depth (in.)	<u>12</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>24</u>	<u>8</u>	<u>8</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>5243 42</u> <u>NO visible vermiculite</u>	BD- _____	BD- <u>→</u>
Entered (LFO) <i>JP</i>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion
(Provide Initials)Completed by *TC*QC by *TC*

Sheet No.: S-000525

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 10 Sampling Date: 9/28/04Address: 378 Cabinet View Country Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 18642</u> <u>12</u> <u>9/28/04</u>	<u>CS- 18643</u> <u>12</u> <u>9/28/04</u>	<u>CS- 18644</u> <u>12</u> <u>9/28/04</u>
Location ID	<u>SP-125875</u>	<u>SP-125876</u>	<u>SP-125876</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #5 women's long tee</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #5 green</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #5 green</u>
Category (circle)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> <u>Subsurface soil</u>
Type (circle)	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>
Sample Time	<u>1450</u>	<u>1545</u>	<u>1545</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>12</u>
Bottom Depth (in.)	<u>8</u>	<u>12</u>	<u>24</u>
Field Comments Note if vermiculite is visible in sampled area	AD- <u>004342</u> <u>no visible vermiculite in any subsamples</u>	BP- _____	BD- _____
Entered (LFO) <u>YB</u> <u>gjs</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

Sheet No.: S- 000523

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 10 Sampling Date: 9/29/04Address: 378 Cabernet View Country Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other _____ Names: Tommy Cook / Terry Crowell

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18645 <i>9/29/04</i>	CS- 18646 <i>9/29/04</i>	CS- 18647 <i>9/29/04</i>
Location ID	<u>SP-125877</u>	<u>SP-125877</u>	<u>SP-125878</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #6</u> <i>men's / org tee</i>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #6</u> <i>men's / org tee</i>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #6</u> <i>men's / org tee</i>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> <i>9/29/04</i> FD of <u>CS-18645</u> Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>
Sample Time	<u>0832</u>	<i>9/29/04</i> <u>0833</u> <u>0846</u>	<u>0855</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>8</u>	<u>8</u>	<u>8</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> <u>No visible vermiculite</u>	BD- _____	BD- _____
Entered (LFO) <i>10/3</i>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

Sheet No.: S- 000527

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 11 Sampling Date: 9/29/04Address: 378 Cabinet Country Club Rd Owner/Tenant: CVCCBusiness Name: view CVCCLand Use: Residential ☐ School ☐ Commercial ☒ Mining ☐ Roadway ☐ Other () ☐Sampling Team: MACTEC (CDM) Other _____ Names: Terry Crowley / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18648 <u>9/29/04</u>	CS- 18649 <u>9/29/04</u>	CS- 18650 <u>9/29/04</u>
Location ID	<u>SP-125879</u>	<u>SP-125880</u>	<u>SP-125880</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole # 6 woman's trash</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole # 6 green</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole # 6 green</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> <u>sub surface soil</u>
Type (circle)	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp.</u> # subsamples <u>5</u>
Sample Time	<u>0918</u>	<u>1005</u>	<u>1005</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>12</u>
Bottom Depth (in.)	<u>8</u>	<u>12</u>	<u>24</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> <u>No visible vermiculite</u>	BD- _____	BD- <u>2</u>
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion

Completed by TCQC by JP

REVISED

Sheet No.: S-

000523

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOILField Logbook No: 100386 Page No: 11 Sampling Date: 9/29/04Address: 378 Cabinet View Country Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential ☐ School ☐ Commercial ☒ Mining ☐ Roadway ☐ Other () ☐Sampling Team: MACTEC CDM Other ☐ Names: Thomas Cook / Terry Crowell

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18651	CS- 18652	CS- 18653
Location ID	<u>SP-125881</u>	<u>SP-125882</u>	<u>SP-125883</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>Hole #7 trees long</u>	Back yard Front yard Side yard Driveway Other <u>Hole #7 Womens short</u>	Back yard Front yard Side yard Driveway Other <u>Hole #7 to green</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>
Sample Time	<u>1037</u>	<u>1117</u>	<u>1202</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>8</u>	<u>8</u>	<u>12</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u>	BD- _____ <u>trace (few flakes)</u> <u>visible in 1 sub-</u> <u>sample. collected</u> <u>additional subsample</u>	BD- _____ <u>visible in 4-8"</u> <u>layer in 3</u> <u>subsamples</u>
Entered (LFO)	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

TC
per Ray Ramp in
area suspect of
containing vermiculite fill

For Field Team Completion
(Provide Initials)

Completed by

TC

QC by

TEC

Sheet No.: S- 000523

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 12 Sampling Date: 9/29/04
 Address: 378 Cabinet View Country Club Rd Owner/Tenant: CVCC
 Business Name: CVCC
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Tommy Cook/Terry Crowell

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18654 <i>12/29/04</i>	CS- 18655 <i>12/29/04</i>	CS- 18656 <i>12/29/04</i>
Location ID	SP-125883	SP-125884	SP-125885
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #7 green</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #8 ^{women's} toolbox</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Hole #8 ^{man's} toolbox</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> <u>subsurface soil</u>	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> _____
Type (circle)	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>
Sample Time	<u>1202</u>	<u>1357</u>	<u>1425</u>
Top Depth (in.)	<u>12</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>24</u>	<u>8</u>	<u>8</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> no visible vermiculite in any subsamples	BD- _____	BD- _____
Entered (LFO) <i>JS</i>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by VZQC by TE

Sheet No.: S- 000656

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 12 Sampling Date: 9/29/04Address: 378 Cabinet View Country Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other _____ Names: Tommy Cook/ Terry Crowell

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18657 ✓	CS- 18658 ✓	CS- 18659
Location ID	<u>SP-125886</u>	<u>SP-125886</u>	<u>SP-125887</u>
Sample Group	<u>property</u>	<u>property</u>	<u>property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>Hole #8 green</u>	Back yard Front yard Side yard Driveway Other <u>Hole #8 green</u>	Back yard Front yard Side yard Driveway Other <u>sand pile</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other <u>subsurface soil</u>	<u>Surface Soil</u> Other <u>stockpile</u>
Type (circle)	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> <u>Comp</u> # subsamples <u>5</u>	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1516</u>	<u>1516</u>	<u>1530</u>
Top Depth (in.)	<u>0</u>	<u>12</u>	<u>entirely with</u>
Bottom Depth (in.)	<u>12</u>	<u>24</u>	<u>NA</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> <u>no visible vermiculite seen in any subsamples</u> →	BD- _____	BD- _____ <u>stockpile used for filling all bunkers</u>
Entered (LFO) <u>ps</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

Sheet No.: S- 000568

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 13 Sampling Date: 9/29/04Address: 378 Cabinet View Country Club Rd Owner/Tenant: CVCCBusiness Name: CVCCLand Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other Names: Tommy Cook / Terry Crowell

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS-18660 ✓	CS-18661 ✓	CS-18663 * ✓
Location ID	SP-125887	SP-125888	SP-125889
Sample Group	property	property	property
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>bunker sand pit</u>	Back yard Front yard Side yard Driveway Other <u>Hole #1 tee box & practice green</u>	Back yard Front yard Side yard Driveway Other <u>Hole #3 women's tee</u>
Category (circle)	FS FD of <u>CS-18659</u> Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	Surface Soil Other <u>stockpile</u>	Surface Soil Other _____	Surface Soil Other _____
Type (circle)	Grab Comp. # subsamples _____	Grab Comp. # subsamples <u>5</u>	Grab Comp. # subsamples <u>5</u>
Sample Time	1530	1542	
Top Depth (in.)	NA	0	0
Bottom Depth (in.)	NA	8	8
Field Comments Note if vermiculite is visible in sampled area	BD- _____ <u>no vermiculite</u>	BD- _____	BD- _____ * SAMPLE DATE ON THIS SAMPLE IS 9/30/04
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion

Completed by JTQC by TJR

Sheet No.: S- 000570

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100386 Page No: 14 Sampling Date: 9/30/04
 Address: NA Owner/Tenant: NA

Business Name: NALand Use: Residential School Commercial Mining Roadway Other (NA)Sampling Team: MACTEC CDM Other _____ Names: Terry Crowell / Tommy Cook

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS-18664</u>		
Location ID	<u>AD-000001</u>		
Sample Group	<u>BLANK</u>		
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>NA</u>	Back yard Front yard Side yard Driveway Other <u>NA</u>	Back yard Front yard Side yard Driveway Other <u>NA</u>
Category (circle)	FS FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	Surface Soil Other <u>silica sand</u>	Surface Soil Other _____	Surface Soil Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	Grab Comp. # subsamples _____	Grab Comp. # subsamples _____
Sample Time	<u>1615</u>		
Top Depth (in.)	<u>NA</u>		
Bottom Depth (in.)	<u>NA</u>		
Field Comments Note if vermiculite is visible in sampled area	BD- <u>NA</u>	BD- _____	BD- _____
Entered (LFO) <u>js</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

Sheet No.: D- 000296

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR DUST

Field Logbook No: 100386 Page No: 16 Sampling Date: 9/30/04
 Address: 1260 Cabinet Heights Rd Owner/Tenant: CVCC (Leases pump house)
 Business Name: CVCC
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC QDM Other Names: Tommy Cook/Terry Howell

Data Item	Cassette 1	Cassette 2	Cassette 3
Index ID	CS- 18662		
Location ID	BD-004343		
Sample Group (circle) (Subgroup of the property)	Garage, House, Shed, <u>Pump House</u> Other	Garage, House, Shed, Pump House Other	Garage, House, Shed, Pump House Other
Location Description (circle) (Detailed description point within the location)	Basement, <u>Ground Floor</u> , Second Level Other	Basement, Ground Floor, Second Level Other	Basement, Ground Floor, Second Level Other
Matrix Type (circle)	<u>Horizontal Surfaces</u> <u>High Traffic Areas</u> Other	Horizontal Surfaces High Traffic Areas Other	Horizontal Surfaces High Traffic Areas Other
Category (circle)	<u>FS</u> FB-(field blank) LB-(lot blank)	FS FB-(field blank) LB-(lot blank)	FS FB-(field blank) LB-(lot blank)
Sample Area (cm ²) (circle)	100 200 <u>300</u> NA	100 200 300 NA	100 200 300 NA
Filter Diameter (circle)	<u>25mm</u> 37mm	25mm 37mm	25mm 37mm
Pore Size (circle)	<u>TEM-.45</u> PCM-.0.8	TEM-.45 PCM-.0.8	TEM-.45 PCM-.0.8
Flow Meter Type (circle)	Rotometer <u>Dry-Cal</u> NA	Rotometer Dry-Cal NA	Rotometer Dry-Cal NA
Pump ID No.	<u>691405</u>		
Flow Meter ID No.	<u>6242</u> <u>7-9/30/04</u> <u>2380</u>		
Start Time	<u>0949</u> <u>0952</u> <u>0956</u>		
Start Flow (L/min)	<u>2.02</u>		
Stop Time	<u>0951</u> <u>0954</u> <u>0958</u>		
Stop Flow (L/min)	<u>2.02</u>		
Pump Fault? (circle)	<u>No</u> Yes	No Yes	No Yes
Field Comments	100 cm ² <u>N ROOM</u> 100 cm ² <u>TOP OF ELECTRIC</u> 100 cm ² <u>PANEL ON NE WALL</u> 100 cm ² <u>N ROOM, FLOOR</u> 100 cm ² <u>BY NW WALL</u> 100 cm ² <u>S ROOM ON FLOOR</u> 100 cm ² <u>BY NE WALL</u> Archive Blank (circle): Yes <u>No</u>	100 cm ² 100 cm ² 100 cm ² Archive Blank (circle): Yes No	100 cm ² 100 cm ² 100 cm ² Archive Blank (circle): Yes No
Cassette Lot Number: <u>23802</u>			
Entered (LFO) <u>js</u> <u>jh</u>	Volpe: Entered Validated	Entered Validated	Entered Validated

For Field Team Completion

Completed by: TCQC by: TC

Sheet No.: D- 000297

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR DUST

Field Logbook No: 100386 Page No: 17 Sampling Date: 9/30/04
Address: NA Owner/Tenant: CVCC NA 9/30/04Business Name: CVCC NA 9/30/04Land Use: Residential School Commercial Mining Roadway Other ()Sampling Team: MACTEC CDM Other Names: Tommy Cook / Terry Crum

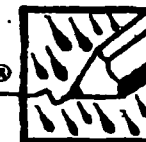
Data Item	Cassette 1	Cassette 2	Cassette 3
Index ID	CS- 18665		
Location ID	<u>BD-004343</u> <u>BLANK</u> <u>7b 10/1/04</u>		
Sample Group (circle) (Subgroup of the property)	Garage, House, Shed, Pump House Other <u>BLANK</u>	Garage, House, Shed, Pump House Other	Garage, House, Shed, Pump House Other
Location Description (circle) (Detailed description point within the location)	Basement, Ground Floor, Second Level Other <u>2B 9/30/04 NA</u>	Basement, Ground Floor, Second Level Other	Basement, Ground Floor, Second Level Other
Matrix Type (circle)	Horizontal Surfaces High Traffic Areas Other <u>NA</u>	Horizontal Surfaces High Traffic Areas Other	Horizontal Surfaces High Traffic Areas Other
Category (circle)	FS <u>FB</u> (field blank) LB (lot blank)	FS <u>FB</u> (field blank) LB (lot blank)	FS <u>FB</u> (field blank) LB (lot blank)
Sample Area (cm ²) (circle)	100 200 300 <u>NA</u>	100 200 300 NA	100 200 300 NA
Filter Diameter (circle)	<u>25mm</u> 37mm	25mm 37mm	25mm 37mm
Pore Size (circle)	<u>TEM-.45</u> PCM-.0.8	TEM-.45 PCM-.0.8	TEM-.45 PCM-.0.8
Flow Meter Type (circle)	Rotometer Dry-Cal <u>NA</u>	Rotometer Dry-Cal NA	Rotometer Dry-Cal NA
Pump ID No.	<u>NA</u>		
Flow Meter ID No.			
Start Time			
Start Flow (L/min)			
Stop Time			
Stop Flow (L/min)			
Pump Fault? (circle)	No Yes <u>NA</u>	No Yes	No Yes
Field Comments	100 cm ² 100 cm ² 100 cm ²	100 cm ² 100 cm ² 100 cm ²	100 cm ² 100 cm ² 100 cm ²
Cassette Lot Number: <u>23802</u>			
Archive Blank (circle): Yes <u>No</u>	Archive Blank (circle): Yes No	Archive Blank (circle): Yes No	
Entered (LFO) <u>fb</u>	Volpe: Entered Validated	Entered Validated	Entered Validated

December 2004 Sampling Event

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LIBBY ASBESTOS PROJECT

Removal Oversight

11-29-04 to
208 VANDERWOOD RD.
378 CABINET VIEW RD
208 BOTHMAN DR.

Cabinet View CC
378 Cabinet View Rd

FEB. 22, 2005 12:37PM CDM

NO. 976 P. 45/45

**Libby Asbestos Project
CDM Contractor Logbook**

Return to:
Scott Supernaugh
60 Post Boulevard, Suite 201
Libby, MT 59923
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Every Page:

- Initial and date every page, sign and date last entry of the day. Line out once, initial and date all changes. NO blank lines.

Daily Entries

- Author, date & time, weather, activities, persons on team, level of PPE, title of governing document.

CRRAR=Comprehensive Remedial Removal Action Plan

RAWP=Response Action Work Plan

Residential Removal Oversight Equipment

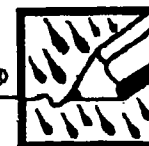
Small shovel, 4x6 and 9x12 poly sample bags, 5 gallon buckets; radio, cell phone, camera, SKC low flow air pumps, high flow air pumps, Rotometer, 20" box fan, 1 hp leaf blower, air pump stands, tygon tubing, 0.8um PCM cassettes, GFIC splitters, soil probes.

Air Clearance Procedures:

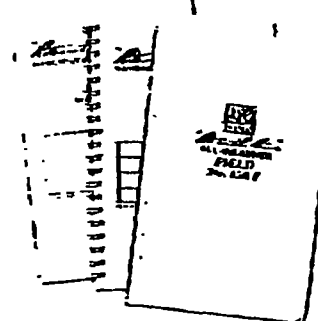
Prior to sampling a 1-hp leaf blower will be used to blow down the sample area. Air sampling pumps will be pre and post calibrated. During sampling a 20" box fan will be placed in the center of the sample area facing the ceiling-running on high.

GIRA-General Information for Response Action

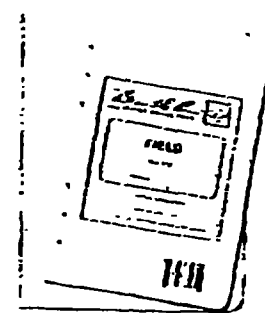
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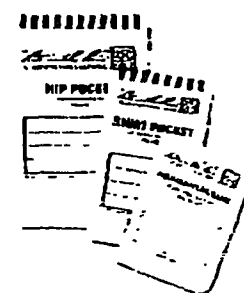
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Every Page:

- Initial and date every page, sign and date last entry of the day. Line out once, initial and date all changes. NO blank lines.

Daily Entries

- Author, date & time, weather, activities, persons on team, level of PPE, title of governing document.

CRRAP=Comprehensive Residential Removal Action Plan
 RAWP=Response Action Work Plan

Air Clearance Procedures:

Prior to sampling a 1-hp leaf blower will be used to blow down the sample area. Air sampling pumps will be pre and post calibrated. During sampling a 20" box fan will be placed in the center of the sample area facing the ceiling-running on high.

GIRA-General Information for Response Action

Residential Removal Oversight Equipment

Small shovel, 4x6 and 9x12 poly sample bags, 5 gallon buckets, radio, cell phone, camera, SKC low flow air pumps, high flow air pumps, Rotameter, 20" box fan, 1 hp leaf blower, air pump stands, tygon tubing, 0.8um PCM cassettes, GFIC splitters, soil probes.

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CONTENTS

PAGE	REFERENCE	DATE
1+2	T.O.C.	11-29-04
3	208 VANDERWOOD RD	12-2-04
4	↓	12-2-04
5	↓	12-3-04
6	↓	12-6-04
7	↓	12-7-04
8	378 CABINET VIEW RD	12-10-04
9	↓	12-10-13-04
10	↓	12-13-04
11	↓	12-13-14-04
12	BLANK	
13	208 BOTHMAN DR	12-14-04
14	↓	12-15-04
15	↓	12-15-04
16	↓	12-16-04
17		
18		

378 CABINET VIEW RD. 12-10-04
 SOIL SAMPLING L.O.#100404 VOLPE/EPA
 OWN: CABINET VIEW COUNTRY CLUB CDK: TOM V.
 ACTHOK TOM VAN DERWEL, WEATHER IS 34° + RAIN
 @ 0929. ACTIVITIES ARE SOIL SAMPLING WITH
 MIZEL HILLENBECK. PPE LEVEL D. TITLE OF
 GOU DOES ON PG. 48. EQUIP USED ON PG. 48.
 GPS WORK DONE ON 12-9-04. TV
 13151 - HERE TO SOIL SAMPLE TV

CS- 18681	SP- 126441	FSDS#5 000405
CS- 18682	SP- 126442	
CS- 18683	SP- 126443	
CS- 18684	SP- 126444	FSDS#5 000406
CS- 18685	SP- 126445	
CS- 18686	SP- 126446	
CS- 18687	SP- 126447	FSDS#5- 000407
CS- 18688	SP- 126448	
CS- 18689	SP- 126449	
CS- 18690	SP- 126450	FSDS#5- 000499
CS- 18691	SP- 126451	
CS- 18692	SP- 126452	

T.V. 12/10/04

378 CABINET VIEW RD. 12-10-04
 SOIL SAMPLING L.O.#100404 VOLPE/EPA 9
 CABINET VIEW C.C. CDK: TOM V + K.H.

CS- 18693	SP- 126453	FSDS#5 000501
CS- 18694	SP- 126454	
CS- 18695	SP- 126455	
CS- 18696	SP- 126456	FSDS#5 000502
CS- 18697	SP- 126457	
CS- 18698	SP- 126458	
CS- 18699	SP- 126459	FSDS#5 000503
CS- 18700	SP- 126460	
TV CS- 18701	SP- 126461	
CS- 18702	SP- 126462	FSDS#-S 000504
CS- 18703	SP- 126463	
CS- 18704	SP- 126464	
CS- 18705	SP- 126465	FSDS#S- 000505
CS- 18706	SP- 126466	
TV CS- 18707	SP- 126467	

T.V. 12/10/04

TO 378 CABINET VIEW RD.
SOIL SAMPLING
OLON: CABINET VIEW C.C. L.B.#100404

12-17-04
VOLPB/CPA
CDM: TORV/AN.H.

378 CABINET VIEW RD. L.B.#100404
SOIL SAMPLING
OLON: CABINET VIEW C.C.

12-17-04
VOLPB/CPA 11
CDM: TORV/AN.H.

CS- 18708	SP- 126468	TV
CS- 18709	SP- 126469	FSDS#5-
CS- 18710	SP- 126470	000506.
CS- 18711	SP- 126471	TV
CS- 18712	SP- 126472	FSDS#5
CS- 18713	SP- 126473	000507
CS- 18714	SP- 126474	TV
CS- 18715	SP- 126475	FSDS#5-
CS- 18716	SP- 126476	000509
CS- 18717	SP- 126477	TV
CS- 18718	SP- 126478	FSDS#5-
CS- 18719	SP- 126479	000510
CS- 18720	SP- 126480	TV
CS- 20002	SP- 126481	FSDS#5-
CS- 20003	SP- 126482	000511.

TV 12/10/04

CS- 20004	SP- 126483	TV
CS- 20005	SP- 126484	FSDS#5-
CS- 20006	SP- 126485	000512.

TV

12/10/04 - MON. TORV/AN.H. WEATHER 15/70 +
CLEAR @ 0815. ACTIVITIES ARE SOIL SAMPLING
MEGAN HALLERBECK ASSISTING. PRE LEVEL
D. TITLE OF GOU DOCS ON PG. 48. EQUIP USED
ON PG. 48.

0815 - HERE TO CONTINUE SOIL SAMPLING.
1107 - DONE WITH SOIL SAMPLING.

1315 - ALH. IN OFFICE TO DOUBLE BAG
& SEAL SOIL SAMPLES.

1530 - PATTY STRONG INFORMED ME THAT
SAMPLES NEED TO BE RE-LABELED TO
CS FROM IR.

FINISH RE-LABELING & CHANGING IR #'S
ON GPS HANDHELD TO CS'S MORNING
OF 12-14-04.

Tom Vanderweil
12-14-04

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100434 Page No: 8 Sampling Date: 12/10/04
 Address: 378 CABINET VIEW RD Owner/Tenant: CABINET VIEW COUNTRY CLUB
 Business Name: CABINET VIEW COUNTRY CLUB
 Land Use: Residential ☐ School ☐ Commercial ☒ Mining ☐ Roadway ☐ Other ☐
 Sampling Team: MACTEC CDM Other ☐ Names: VANDERWEE/HALLENBECK

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 18681</u>	<u>CS- 18682</u>	<u>CS- 18683</u>
Location ID	<u>SP- 126441</u>	<u>SP- 126442</u>	<u>SP- 126443</u>
Sample Group	<u>PROPERTY</u>	<u>PROPERTY</u>	<u>PROPERTY</u>
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>TEE #1</u>	Back yard Front yard Side yard Driveway Other <u>FAIRWAY</u>	Back yard Front yard Side yard Driveway Other <u>FAIRWAY</u>
Category (circle)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1330</u>	<u>1333</u>	<u>1340</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>1</u>	<u>1</u>	<u>1</u>
Field Comments (Note if vermiculite is visible in sampled area)	<u>BD- 004342</u> <u>NO LV seen</u>	<u>BD- 004342</u> <u>NO LV seen</u>	<u>BD- 004342</u> <u>NO LV seen</u>
	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide initials)

Completed by

QC by jb

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100404 Page No: 8 Sampling Date: 12/10/04
 Address: 378 CABINET VIEW RD Owner/Tenant: CABINET VIEW COUNTRY CLUB
 Business Name: CABINET VIEW COUNTRY CLUB
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: VANDERWEELE / HALLENBECK

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18684	CS- 18685	CS- 18686
Location ID	SP- 126444	SP- 126445	SP- 126446
Sample Group	PROPERTY	PROPERTY	PROPERTY
Location Description (circle)	Back yard Front yard Side yard #1 Driveway Other <u>FAIRWAY</u>	Back yard Front yard Side yard #1 Driveway Other <u>FAIRWAY</u>	Back yard Front yard Side yard Driveway Other <u>TEE #2</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1343	1347	1351
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> No LV Seen	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV Seen
Entered (LFO) <u>JB</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by JB

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100404 Page No: 8 Sampling Date: 12/10/04
 Address: 378 CABINET VIEW RD Owner/Tenant: CABINET VIEW COUNTRY CLUB
 Business Name: CABINET VIEW COUNTRY CLUB
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: VANDERWEELE / HALENBECK

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18687	CS- 18688	CS- 18689
Location ID	SP- 126447	SP- 126448	SP- 126449
Sample Group	PROPERTY	PROPERTY	PROPERTY
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>FAIRWAY</u> #2	Back yard Front yard Side yard Driveway Other <u>FAIRWAY</u> #2	Back yard Front yard Side yard Driveway Other <u>FAIRWAY</u> #2
Category (circle)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1355	1400	1404
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- 004342 No LV Seen	BD- 004342 No LV Seen	BD- 004342 No LV Seen
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide initials)

Completed by

QC by JP

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100404 Page No: 8 Sampling Date: 12/10/04
 Address: 378 CABINET VIEW RD Owner/Tenant: CABINET VIEW COUNTRY CLUB
 Business Name: CABINET VIEW COUNTRY CLUB
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other Names: VANDERWEELE/HALLENBECK

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18690	CS- 18691	CS- 18692
Location ID	SP- 126450	SP- 126451	SP- 126452
Sample Group	PROPERTY	PROPERTY	PROPERTY
Location Description (circle)	Back yard Front yard #3 Ladies Side yard Driveway <u>Other</u> TEE	Back yard Front yard #3 Mens Side yard Driveway <u>Other</u> TEE	Back yard Front yard #3 Side yard Driveway <u>Other</u> FAIRWAY
Quality (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1407	1411	1416
Top Depth (In.)	0	0	0
Bottom Depth (In.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- 004342 NO LV seen	BD- 004342 NO LV seen	BD- 004342 NO LV seen
Entered (LFO) <u>MP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by MP

Sheet No. S- ~~00655-1~~

LIBBY FIELD SAMPLE DATA SHEET (FSDs) FOR SOIL

Field Logbook No: 100404 Page No: 9 Sampling Date: 12/10/04
 Address: 378 CABINET VIEW RD. Owner/Tenant: CABINET VIEW COUNTRY CLUB
 Business Name: CABINET VIEW COUNTRY CLUB
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: VANDERWEE/HALLENBECK

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS 18693</u>	<u>CS- 18694</u>	<u>CS- 18695</u>
Location ID	<u>SP- 126453</u>	<u>SP- 126454</u>	<u>SP- 126455</u>
Sample Group	<u>PROPERTY</u>	<u>PROPERTY</u>	<u>PROPERTY</u>
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>TEE #4</u>	Back yard Front yard Side yard <u>#4</u> Driveway Other <u>FAIRWAY</u>	Back yard Front yard Side yard <u>#4</u> Driveway Other <u>FAIRWAY</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1428</u>	<u>1431</u>	<u>1434</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>1</u>	<u>1</u>	<u>1</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD- 004342</u> <u>NO LV seen</u>	<u>BD- 004342</u> <u>NO LV seen</u>	<u>BD- 004342</u> <u>NO LV seen</u>
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by JP

Sheet No.: S- 000502

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100404 Page No: 9 Sampling Date: 12/10/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other Names: Vanderweel / Hallenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18696 <i>MDH 12/10/04</i>	CS- 18697 <i>MDH 12/10/04</i>	CS- 18698 <i>MDH 12/10/04</i>
Location ID	SP- 126456	SP- 126457	SP- 126458
Sample Group	Property	Property	Property
Location Description (circle)	Back yard #4 Fairway Front yard Side yard Driveway Other <u>Tee</u> <i>MDH 12/10/04</i>	Back yard Front yard Side yard Driveway Other <u>Tee #5</u>	Back yard #5 Tee Front yard Side yard Driveway Other <u>Fairway</u> <i>MDH 12/10/04</i>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1439	1443	1448
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen
Entered (LFO) <i>JP</i>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

 For Field Team Completion
 (Provide initials)

Completed by

QC by *JP*

Sheet No.: S- 000503

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL NDT

Field Logbook No: 10040A Page No: 9 Sampling Date: 12/10/04 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel/Hellenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>1CS- 18699</u> <u>MDH 12/13/04</u>	<u>CS- 18700</u> <u>MDH 12/13/04</u>	<u>CS- 18701</u> <u>MDH 12/13/04</u>
Location ID	<u>SP- 126459</u> <u>MDH 12/13/04</u>	<u>SP- 126460</u> <u>MDH 12/13/04</u>	<u>SP- 126461</u> <u>MDH 12/13/04</u>
Sample Group	<u>Property</u>	<u>Property</u>	<u>Property</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Tee #5</u>	Back yard Front yard #5 Fairway Side yard Driveway <u>Other Tee 12/10/04</u>	Back yard Front yard Side yard Driveway <u>Other Fairway #5</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1451</u>	<u>1455</u>	<u>0853</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>1</u>	<u>1</u>	<u>1</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> <u>NO LV seen</u>	BD- <u>004342</u> <u>NO LV seen</u>	BD- <u>004342</u> <u>NO LV seen</u>
Entered (LFO) <u>Yb</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by Yb

Sheet No.: S- 000504

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100404 Page No: 9 Sampling Date: 12/10/04 ^{MDH} 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel/Hellenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18702 ^{MDH 12/10/04}	CS- 18703 ^{MDH 12/10/04}	CS- 18704 ^{MDH 12/10/04}
Location ID	SP- 126462 ^{MDH 12/10/04}	SP- 126463 ^{MDH 12/10/04}	SP- 126464 ^{MDH 12/10/04}
Sample Group	Property	Property	Property
Location Description (circle)	Back yard Front yard #5 Fairway Side yard Driveway <u>Other Tee</u> ^{MDH 12/10/04}	Back yard Front yard #5 Fairway Side yard Driveway <u>Other Tee</u> ^{MDH 12/10/04}	Back yard Front yard #6 Tee Side yard Driveway <u>Other Fairway</u> ^{MDH 12/10/04}
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	0857	0902	0903
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD-0043A2 NO LV SEEN	BD-0043A2 NO LV SEEN	BD-0043A2 NO LV SEEN
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC JP

Sheet No.: S- 0005008

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL M.D.H.

Field Logbook No: 100404 Page No: 9 Sampling Date: 12/10/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel / Hallenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18705	CS- 18706	CS- 18707
Location ID	SP- 126465	SP- 126466	SP- 126467
Sample Group	Property	Property	Property
Location Description (circle)	Back yard Front yard Side yard Driveway Other <u>Tee #6</u>	Back yard Front yard Side yard Driveway Other <u>Tee #6</u>	Back yard Front yard Side yard Driveway Other <u>Fairway #6</u>
Category (circle)	FS FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	0930	0934	0934
Top Depth (In.)	0	0	0
Bottom Depth (In.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen
Entered (LFO) <u>Jo</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by Jo

Sheet No.: S-000503

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100404 Page No: 10 Sampling Date: 12/10/04 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel/Hallenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18708	CS- 18709	CS- 18710
Location ID	SP- 126468	SP- 126469	SP- 126470
Sample Group	Property	Property	Property
Location Description (circle)	Back yard Front yard #6 Fairway Side yard Driveway Other <u>Tee</u>	Back yard Front yard #6 Fairway Side yard Driveway Other <u>Tee</u>	Back yard #7 Tee Front yard Side yard Driveway Other <u>Tee</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	0933	0944	0944
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen
Entered (LFO) <u>jb</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide initials)

Completed by

QC by jb

Sheet No.: S- 000507LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL ^{MDH}

Field Logbook No: 100404 Page No: 10 Sampling Date: 12/10/04 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other (____)
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel/Hallenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18711 <u>MDH 12/10/04</u>	CS- 18712 <u>MDH 12/10/04</u>	CS- 18713 <u>MDH 12/10/04</u>
Location ID	SP- 126471 <u>MDH 12/10/04</u>	SP- 126472 <u>MDH 12/10/04</u>	SP- 126473 <u>MDH 12/10/04</u>
Sample Group	Property	Property	Property
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Tee #7</u>	Back yard #7 Front yard Side yard Fairway Driveway <u>MDH 12/10/04</u> <u>Other Tee</u>	Back yard #8 Tee Front yard Side yard Driveway <u>MDH 12/10/04</u> <u>Other Fairway</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)	<u>ES</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>0952</u>	<u>0956</u>	<u>1032</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>1</u>	<u>1</u>	<u>1</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen	BD- <u>004342</u> No LV seen
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by JP

Sheet No.: S- 000503LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL ^{MDH}

Field Logbook No: 00404 Page No: 10 Sampling Date: 12/10/04 ^{MDH} 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel/Hallenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18714 ^{MDH} <u>12/10/04</u>	CS- 18715 ^{MDH} <u>12/10/04</u>	CS- 18716 ^{MDH} <u>12/10/04</u>
Location ID	SP- 126474 ^{MDH} <u>12/10/04</u>	SP- 126475 ^{MDH} <u>12/10/04</u>	SP- 126476 ^{MDH} <u>12/10/04</u>
Sample Group	Property	Property	Property
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Tee #8</u>	Back yard Front yard Side yard Driveway <u>Other Tee #8 Fairway</u>	Back yard Front yard Side yard Driveway <u>Other Fairway #8</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1036	1030	1034
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> NO LV seen	BD- <u>004342</u> NO LV seen	BD- <u>004342</u> NO LV seen
Entered (LFO) <u>JP</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by JP

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL MDH

Field Logbook No: 100404 Page No: 10 Sampling Date: 12/10/04 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Vanderweel / Hellenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18717 MDH 12/10/04	CS- 18718 MDH 12/10/04	CS- 18719 MDH 12/10/04
Location ID	SP- 126477 MDH 12/10/04	SP- 126478 MDH 12/10/04	SP- 126479 MDH 12/10/04
Sample Group	Property	Property	Property
Location Description (circle)	Back yard Front yard #8 Fairway Side yard Driveway Other <u>Tee</u> MDH 12/10/04	Back yard Front yard Side yard Driveway Other <u>Tee #9</u>	Back yard #9 Tee Front yard Side yard Driveway Other <u>Fairway</u> MDH 12/10/04
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1039	1047	1053
Top Depth (In.)	0	0	0
Bottom Depth (In.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> No LV seen	BD- <u>004342</u> MDH 12/13/04 No LV seen VCS	BD- <u>004342</u> No LV seen
Entered (LFO) <u>yo</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by yo

Sheet No.: S- 000511

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 00404 Page No: 10 Sampling Date: 12/10/04 ^{MDH} 12/13/04
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential School Commercial Mining Roadway Other ()
 Sampling Team: MACTEC CDM Other _____ Names: Kinderweel / Hollenbeck

Data Item	Sample 1	Sample 2	Sample 3
Index ID	CS- 18720 ^{MDH} 12/10/04	CS- 20002 ^{MDH} 12/10/04	CS- 20003 ^{MDH} 12/10/04
Location ID	SP- 126480 ^{MDH} 12/10/04	SP- 126481 ^{MDH} 12/10/04	SP- 126482 ^{MDH} 12/10/04
Sample Group	Property	Property	Property
Location Description (circle)	Back yard #9 drop area Front yard Side yard Driveway Other <u>Tee</u> ^{MDH} 12/10/04	Back yard #9 Front yard Fairway Side yard Driveway Other <u>Tee</u> ^{MDH} 12/10/04	Back yard Front yard Side yard Driveway Other <u>Fairway</u> ^{MDH} 12/10/04
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	1059	1103	1103
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> NO LV seen	BD- <u>004342</u> NO LV seen	BD- <u>004342</u> NO LV seen
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide initials)

Completed by

QC by JP

Sheet No.: S- 000512LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL ^{MDH}

Field Logbook No: 00404 Page No: 11 Sampling Date: 12/10/04 ^{12/13/04}
 Address: 378 Cabinet View Rd Owner/Tenant: Cabinet View Country Club
 Business Name: Cabinet View Country Club
 Land Use: Residential ☐ School ☐ Commercial ☒ Mining ☐ Roadway ☐ Other () ☐
 Sampling Team: MACTEC CDM Other ☐ Names: Hallenbeck / Venderweel

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 20004</u> ^{MDH 12/10/04}	<u>CS- 20005</u> ^{MDH 12/10/04}	<u>CS- 20006</u> ^{MDH 12/10/04}
Location ID	<u>SP- 126483</u> ^{MDH 12/10/04}	<u>SP- 126484</u> ^{MDH 12/10/04}	<u>SP- 126485</u> ^{MDH 12/10/04}
Sample Group	<u>Property</u>	<u>Property</u>	<u>Property</u>
Location Description (circle)	Back yard <u>#9 Fairway</u> Front yard Side yard Driveway <u>Other Tee</u> ^{MDH 12/10/04}	Back yard <u>#9 Fairway</u> Front yard Side yard Driveway <u>Other Tee</u> ^{MDH 12/10/04}	Back yard <u>#1 Ladies tee</u> Front yard Side yard Driveway <u>Other Fairway</u> ^{MDH 12/10/04}
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other, w/see noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1113</u>	<u>1120</u>	<u>1335</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>1</u>	<u>1</u>	<u>1</u>
Field Comments Note if vermiculite is visible in sampled area	BD- <u>004342</u> <u>No LV seen</u>	BD- <u>004342</u> <u>No LV seen</u>	BD- <u>004342</u> <u>No LV seen</u>
Entered (LFO) <u>JP</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion
(Provide Initials)

Completed by

QC by JP